1900MNRAS..60R.566W

Observations of Minor Planets at Windsor, N.S. Wales. By John Tebbutt.

The accompanying observations have been made with the filar-micrometer on the 8-inch equatorial refractor, and in a bright field. The reductions have been made with a new and improved value (17″·813) of a revolution of the micrometer screw, and the differential coordinates have been corrected for refraction and a small error in the perpendicularity of the micrometer threads. The corrections to the ephemeris of *Vesta* in the *Nautical Almanac*, and to that of *Iris* in the *Ast. Jahrbuch* have been kindly supplied by Mr. Merfield, F.R.A.S., of Sydney. The observations of the latter planet have been made expressly for Dr. J. Riem's proposed improved tables of *Iris*.

Observations.

1899.	Windsor Mean Time.	Planet—Star. Δ R.A.	Δ N.P.D.	Comps.	Reductions to App. Place R.A.	N.P.D.	Planet's Apparent R.A.	N.P.D.	Log p Δ for R.A.	N.P.D.	Star.	Obs.—Cal. R.A.	N.P.D.
							④ *Vesta.*						
	h m s	m s	′ ″		s		h m	° ′ ″				s	″
Oct. 31	8 38 17	+5 26·50	− 8 30·4	10	+4·69	−27·4	1 20 58·14	93 37 39·9	9·4067*n*	0·6494	1	+2·15	−12·9
Nov. 1	8 25 49	+4 37·24	− 6 30·5	10	+4·69	−27·3	1 20 8·88	93 39 39·9	9·4300*n*	0·6500	1	+2·17	−13·5
7	8 59 30	+0 1·20	+ 1 14·0	15	+4·69	−26·8	1 15 32·84	93 47 24·9	9·1729*n*	0·6430	1	+2·05	−13·0
8	8 5 10	−0 38·65	+ 1 43·8	20	+4·69	−26·7	1 14 52·99	93 47 54·8	9·3924*n*	0·6471	1	+2·03	−14·2
9	8 52 33	−1 20·15	+ 2 3·9	10	+4·69	−26·7	1 14 11·49	93 48 14·9	9·1592*n*	0·6427	1	+1·98	−14·1
10	7 47 24	−1 56·91	+ 2 10·1	7	+4·69	−26·6	1 13 34·73	93 48 21·2	9·4196*n*	0·6480	1	+1·84	−13·9
14	9 24 1	−4 19·80	+ 0 26·7	9	+4·68	−26·3	1 11 11·83	93 46 38·1	8·4722*n*	0·6410	1	+1·94	−13·4

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1900MNRAS..60..567W

	Windsor Mean Time.	Planet—Star. Δ R.A.	Δ N.P.D.	Comps.	Reductions to App. Place R.A.	N.P.D.	Planet's Apparent R.A.	N.P.D.	Log $p\,\Delta$ for R.A.	N.P.D.	Star.	Obs.—Cal. R.A.	N.P.D.
					(7) *Iris.*								
1899.	h m s	m s	′ ″		s	″	h m s	° ′ ″				s	″
Oct. 17	10 36 38	−0 15·16	−16 38·3	20	+4·91	−28·9	1 12 47·91	71 40 10·7	9·0747*n*	0·8377	2	+2·03	−6·8
18	10 11 0	−1 0·92	−8 57·7	20	+4·92	−28·9	1 12 2·16	71 47 51·3	9·2156*n*	0·8333	2	+2·11	−7·1
23	9 30 1	−5 46·93	...	3	+4·94	...	1 8 18·04	...	9·3026*n*	...	3	+2·34	...
23	9 30 1	−6 43·26	...	3	+4·94	...	1 8 18·22	...	9·3026*n*	...	4	+2·52	...
23	9 30 1	−7 10·49	+10 26·5	3	+4·94	−29·2	1 8 17·62	72 28 50·6	9·3026*n*	0·8254	5	+1·92	−12·4
25	9 12 21	−3 59·05	−7 17·9	5	+4·92	−29·6	1 6 53·64	72 46 7·7	9·3380*n*	0·8218	6	+2·19	−7·7
31	10 0 14	−2 40·59	−5 30·0	10	+4·90	−30·1	1 3 6·62	73 39 31·4	8·7397*n*	0·8285	7	+2·29	−10·8
31	10 0 14	−4 26·18	−6 13·3	10	+4·91	−30·0	1 3 6·03	73 39 33·5	8·7397*n*	0·8285	8	+1·70	−8·7
Nov. 1	9 51 41	−3 12·84	+3 18·8	10	+4·90	−30·2	1 2 34·37	73 48 20·1	8·8055*n*	0·8274	7	+2·35	−11·5
1	9 51 41	−4 58·44	+2 35·4	10	+4·91	−30·1	1 2 33·77	73 48 22·1	8·8055*n*	0·8274	8	+1·75	−9·5
7	10 25 20	+2 9·35	+16 47·8	10	+4·85	−30·7	0 59 55·54	74 40 35·7	8·8429	0·8214	9	+2·00	−9·3
9	10 7 18	−3 17·22	...	10	+4·86	...	0 59 18·92	...	8·6833	...	10	+2·09	...
9	10 7 18	−5 36·12	+5 44·7	10	+4·87	−30·4	0 59 18·83	74 57 3·1	8·6833	0·8203	11	+2·00	−8·4
17	8 52 37	+3 46·04	+0 59·6	15	+4·77	−30·8	0 58 16·11	75 56 35·8	8·6567*n*	0·8135	12	+1·73	−6·0
18	8 35 46	+3 48·01	+7 33·5	15	+4·77	−30·8	0 58 18·08	76 3 9·7	8·8686*n*	0·8120	12	+1·76	−6·3
19	8 40 41	+3 52·22	+14 2·2	15	+4·76	−30·8	0 58 22·28	76 9 38·4	8·7369*n*	0·8118	12	+1·85	−4·9
20	9 7 26	−0 8·45	−19 48·9	20	+4·77	−30·4	0 58 28·35	76 15 59·9	8·1175	0·8117	13	+1·51	−3·8

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1899.	Windsor Mean Time.	Planet—Star. Δ R.A.	Planet—Star. Δ N.P.D.	Comps.	Reductions to App. Place R.A.	Reductions to App. Place N.P.D.	Planet's Apparent R.A.	Planet's Apparent N.P.D.	Log p Δ for R.A.	Log p Δ for N.P.D.	Star.	Obs.—Cal. R.A.	Obs.—Cal. N.P.D.
	h m s	m s	′ ″		s	″	h m s	° ′ ″				s	″
Nov. 23	9 0 53	+0 23·95	− 2 32·7	20	+4·75	−30·4	0 59 0·73	76 33 16·1	8·3716	0·8097	13	+1·61	− 4·8
24	9 1 33	+0 39·18	+ 2 45·5	20	+4·75	−30·4	0 59 15·96	76 38 34·3	8·5193	0·8088	13	+1·66	− 5·3
25	8 52 32	+0 56·43	+ 7 48·4	15	+4·74	−30·4	0 59 33·20	76 43 37·2	8·3286	0·8083	13	+1·64	− 4·8
26	8 42 40	+1 15·86	+12 35·8	15	+4·73	−30·4	0 59 52·62	76 48 24·6	7·8748	0·8080	13	+1·66	− 5·5
27	9 0 17	+1 37·85	+17 14·7	15	+4·73	−30·4	1 0 14·61	76 53 3·5	8·7332	0·8068	13	+1·72	− 5·5
28	9 11 58	+7 57·42	+ 6 57·8	8	+4·69	−30·5	1 0 38·62	76 57 27·5	8·9414	0·8053	14	+1·70	− 4·5
Dec. 5	9 10 8	+3 5·12	−13 38·8	10	+4·68	−29·8	1 4 24·54	77 20 58·8	9·1285	0·8000	15	+1·47	− 3·7
8	9 26 10	+5 13·13	− 7 16·1	10	+4·66	−29·6	1 6 32·53	77 27 21·7	9·2740	0·7954	15	+1·54	− 4·1
12	8 44 54	+2 35·72	+ 3 4·5	14	+4·67	−29·2	1 9 47·75	77 32 25·2	9·1066	0·7990	16	+1·44	− 5·6
14	8 24 12	+4 24·04	+ 4 14·9	10	+4·65	−29·2	1 11 36·05	77 33 35·6	8·9834	0·8004	16	+1·33	− 5·3
16	9 14 50	+6 22·08	+ 4 31·9	10	+4·63	−29·1	1 13 34·07	77 33 52·7	9·3313	0·7919	16	+1·29	− 5·1
17	8 57 54	+7 22·01	+ 4 21·2	10	+4·62	−29·1	1 14 33·99	77 33 42·0	9·2697	0·7946	16	+1·30	− 4·5
22	8 53 28	+4 26·77	− 9 55·8	10	+4·63	−28·3	1 20 0·83	77 29 39·7	9·3138	0·7933	17	+1·48	− 3·6
23	9 15 32	+5 37·79	−11 22·5	8	+4·62	−28·3	1 21 11·84	77 28 13·0	9·4061	0·7880	17	+1·46	− 4·4
25	8 38 57	−3 54·28	+ 3 52·9	10	+4·69	−27·6	1 23 34·35	77 24 52·1	9·2865	0·7951	18	+1·36	− 4·5
26	8 22 55	−2 40·82	+ 1 56·3	10	+4·68	−27·5	1 24 47·80	77 22 55·6	9·2202	0·7976	18	+1·29	− 4·0
29	8 52 36	+1 12·08	− 5 6·6	20	+4·65	−27·4	1 28 40·67	77 15 52·8	9·3834	0·7908	18	+1·33	− 4·9
30	9 2 36	+2 32·45	− 7 47·6	12	+4·64	−27·3	1 30 1·03	77 13 11·9	9·4247	0·7879	18	+1·34	− 4·2

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Mean Places of the Comparison Stars for 1899·0.

Star.	R.A. h m s	N.P.D. ° ′ ″	Authorities.
1	1 15 26·95	93 46 37·7	Yarnall$_3$, 677; Argent. Gen. Cat. 1258; Radcliffe, 1890, 310.
2	1 12 58·16	71 57 17·9	Wash. Gen. Cat. 1875, 310; Radcliffe, 1890, 304; Cincinnati, 1890, 185.
3	1 14 0·03	...	Lalande, 2369.
4	1 14 56·54	...	Lalande, 2400–1.
5	1 15 23·17	72 18 53·3	Lalande, 2411–4; Cincinnati, 1890, 192.
6	1 10 47·77	72 53 55·2	Wash. Gen. Cat. 1875, 298; Radcliffe, 1890, 296; Cincinnati, 1890, 181.
7	1 5 42·31	73 45 31·5	Lalande, 2103.
8	1 7 27·30	73 46 16·8	Lalande, 2158.
9	0 57 41·34	74 24 18·6	Wash. Gen. Cat. 1875, 236; Radcliffe, 1890, 226; Cincinnati, 1890, 138.
10	1 2 31·28	...	Wash. Gen. Cat. 1875, 265; Radcliffe, 1890, 257; Cincinnati, 1890, 151.
11	1 4 50·08	74 51 48·8	Wash. Gen. Cat. 1875, 279; Radcliffe, 1890, 267; Cincinnati, 1890, 164.
12	0 54 25·30	75 56 7·0	Wash. Gen. Cat. 1875, 222; Radcliffe, 1890, 212; Cincinnati, 1890, 129.
13	0 58 32·03	76 36 19·2	Radcliffe, 1890, 230; Cincinnati, 1890, 140.
14	0 52 36·51	76 51 0·2	Yarnall$_3$, 506; Wash. Gen. Cat. 1875, 212; Greenwich, 1880, 149; Radcliffe, 1890, 202; Cincinnati, 1890, 126; Glasgow, 1890, 76.
15	1 1 14·74	77 35 7·4	Greenwich, 1880, 177; Radcliffe, 1890, 246; Glasgow, 1890, 86.
16	1 7 7·36	77 29 49·9	Yarnall$_3$, 626.
17	1 15 29·43	77 40 3·8	Yarnall$_3$, 676.
18	1 27 23·94	77 21 26·8	Lalande, 2806.

Observatory, Peninsula, Windsor, N.S. Wales:
1900 *March* 10.

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